CITY OF BUTTE, MONTANA GREEN PROJECT EVALUATION AND BUSINESS CASE

The City of Butte, Montana engineering project is being funded through the Drinking Water State Revolving Fund Loan Program. The Butte water system provides water to approximately 38,000 people. This project is to conduct pilot plant studies and engineering studies, planning and design for water treatment plant improvements and transmission and distribution lines upgrades and replacements. The engineering work will also include planning and design for 3 pump stations which will include variable speed pumping systems for better energy and hydraulic efficiency.

Documents submitted and reviewed by the State:

1. Uniform Application for Montana Public Facility Projects City of Butte Water System Improvements, prepared by the City of Butte and HKM Engineering.

List of eligible Green Project Reserve components:

1. Engineering studies, evaluations, pilot plant operations, design and permitting tasks. These must be completed in order to produce bidding and construction documents for the:

- construction of a Big Hole River Pump Station,
- Big Hole Raw Water Transmission Main replacement
- Improvements of the Big Hole Treated Water Transmission Main,
- Improvements to the Summit Valley, West Side and Main Street Pump Stations
- Improvements to the West Side Treated Water Transmission Main from Colorado Hill Tank to West Side Tank.
- Improvements to the south side distribution system

2. Total project cost = $ 4,860,000
3. Total Loan/Grant Request = $ 4,860,000
4. Total project cost eligible for Green Project Reserve = $2,193,000

Green Reserve Project – Categorical Project:

This project is not categorically green.

Green Reserve Project – Business Case Evaluation:

"As stated in the USEPA March 2, 2009 Memorandum, for traditional projects that are not categorically green, for the project, or components of the project, to be counted towards the 20% requirement, the State project files must contain documentation that a clear business case for the project (or portion) investment includes achievement of identifiable and substantial benefits that qualify as Green Project benefits. The documentation should reference to a preliminary engineering or other planning document that makes clear that the basis upon which the project (or portion) was undertaken included identifiable and substantial benefits qualifying for the Green Project Reserve. The March 12, 2009 USEPA webcast slides 20 and 21 state that two components, the technical component and financial component, must be provided in the Business Case."

Green Project Reserve Type:
This project fits in with the water efficiency and energy efficiency components of the Green Project Reserve definitions.

Technical Component Evaluation:
The loan will fund engineering studies and design for the above referenced projects. The project will complete a pilot study of technologies to assess the efficacy of various treatment processes for the removal of disinfection by-product precursors. Water treatment plant upgrades are also necessary to increase the capacity of the Big Hole WTP to replace capacity from two other sources (discussed below) that will likely be abandoned. The project will also involve the engineering studies and engineering design to replace undersized, aging and failing sections of the distribution system to improve flows and reduce maintenance requirements. There are approximately 750,000 feet of pipelines in the south part of town and much of that needs to be replaced. This project will also investigate the primary transmission mains and system storage reservoirs and their function and the need for upgrades in order to allow the water system to essentially operate with one source – the Big Hole (or Feeley) water treatment plant. Two other sources will potentially be abandoned due to costs in maintaining them and increasing water quality problems with those two sources – Moulton and Basin Creek. Water main breaks contribute to water losses of high volume and short duration, estimated at between 10,000 gallons and 20,000 gallons per occurrence. This project will conserve water where breaks have been occurring historically and wasting of water has occurred.

Financial Component Evaluation:
It is estimate that this project will also save on operation and maintenance costs associated with repairing main breaks; main break repairs cost on average between $2,250 and $4,250 per occurrence. Pumping costs and energy savings will occur due to decreases in friction losses and less water loss and as a result of variable speed drives that will be specified for the pumping stations.

Green Reserve Project – Evaluation Conclusion: The technical and financial evaluation of this project clearly shows substantial benefits in accordance with USEPA guidance especially with regard to water conservation and energy conservation that will be realized with less water loss and less pumping energy, time and cost. As above, the green portion of the project from DWSRF funds will be $2,193,000.